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# A Third Cavernicolous *Tyrannochthonius* from Hawaii (Pseudoscorpionida: Chthoniidae)

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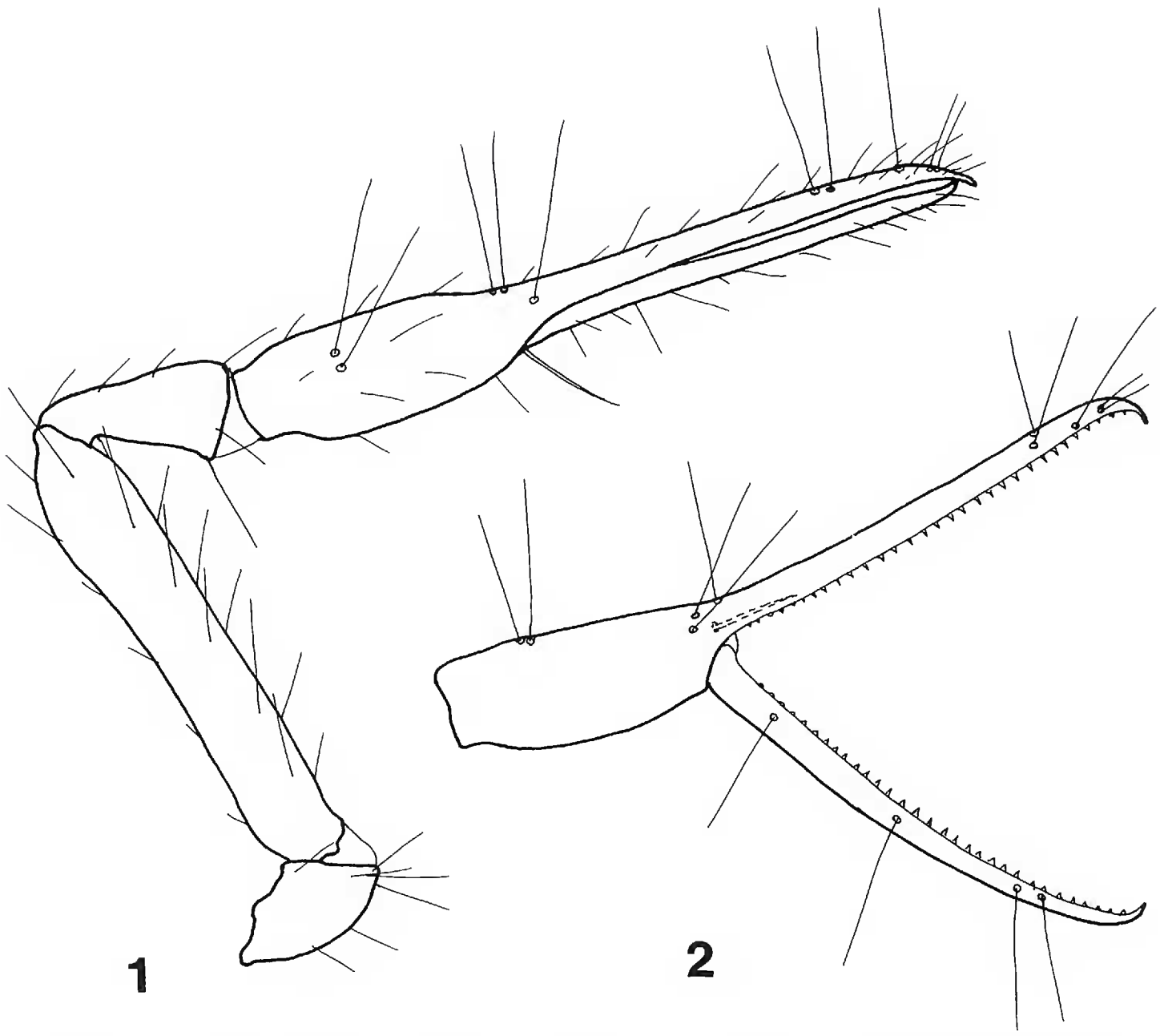
*Abstract.*—*Tyrannochthonius stonei* is described from KaluAuAu Dripping Cave on the island of Maui. It is intermediate in its cave adaptations between *T. pupukeanus* from the island of Oahu and *T. howarthi* from the island of Hawaii.

Further exploration of Hawaiian caves by F. G. Howarth and his colleagues has turned up yet another troglobitic species of *Tyrannochthonius* Chamberlin on the island of Maui.

## *Tyrannochthonius stonei* Muchmore, New Species
(Figs. 1, 2)

*Diagnosis.*—A cave-adapted form with attenuated appendages and reduced eyes. Larger than both other species of *Tyrannochthonius* from Hawaii, with palpal femur >0.8 mm in length; palps more slender than in *T. pupukeanus* Muchmore but less slender than in *T. howarthi* Muchmore, with femur 5.4 times as long as broad.

*Description.*—Female: All parts pale tan. Carapace slightly longer than broad; surface smooth; 4 faint eyespots noted on intact animal but, after mounting, only 1 cornea discernible on each side of carapace; epistome small, triangular, with 2 flanking setae; chaetotaxy d4d-4-4-2-2 = 18, the dwarf setae (d) lying anterior and ventral to eyes. Abdomen typical; tergal chaetotaxy 4:4:4:4:4:4:4:5:5:4:T2T:0; sternal chaetotaxy 8:(4)7(4):4(6)4:8:7:7:7:8:7:0:2. Chelicera as long as carapace; hand with 5 setae; flagellum of 8 pinnate setae; fixed finger with ca. 12 teeth, distal one largest; movable finger with ca. 15 small denticles; galea a low bump; serrula exterior of 19–20 blades. Palps long and slender (Fig. 1); femur 1.61 and chela 2.38× as long as carapace. Trochanter 1.75, femur 5.4, tibia 2.05, and chela 6.35× as long as broad; hand 2.3× as long as deep; movable finger 1.87× as long as hand. Surfaces smooth; setae long and thin; 1 prominent seta on medial side of chelal hand at base of fixed finger. Trichobothria as shown in Figure 2; *sb* slightly nearer to *st* than to *b*. Fixed chelal finger with 31 teeth, tall and sharp distally, becoming smaller proximally; movable finger with 22 tall sharp teeth distally and 10 lower, rounded teeth proximally; both fingers with occasional microdenticles between the macrodenticles; movable finger with a small sensillum on lateral side just distad of trichobothrium *sb*. Legs typical; apex of coxa I with a prominent projection; coxal chaetotaxy 2-2-1:4(3)-0:2-2-CS:2-3:2-3; setae on apex of palpal coxa subequal; 8 long, terminally incised coxal spines (CS) on left coxa II, and 8 similar spines plus 2 tiny ones on right coxa II. Leg IV with entire femur 3.2 and tibia 5.35× as long as deep; tactile setae on tibia and both tarsi.




Figures 1, 2. *Tyrannochthonius stonei.* 1. Dorsal view of left palp. 2. Lateral view of right chela.

*Measurements* (mm).—Female: Body length 1.74. Carapace length 0.52. Chelicera length 0.525. Palpal trochanter 0.265 by 0.15; femur 0.84 by 0.155; tibia 0.33 by 0.16; chela 1.235 by 0.195; hand 0.435 by 0.19; movable finger 0.815 long. Leg IV: entire femur 0.69 by 0.215; tibia 0.48 by 0.09.

Male: Unknown.

*Type data.*—Known only from the type locality. Holotype female (BPBM14342), HAWAIIAN IS.: Maui I.: Ulupalukua, KaluAuAu Dripping Cave, transition/dark zone, 20.IX.1982, collected by F. D. Stone and F. G. Howarth. Type in the Bishop Museum, Honolulu.

*Etymology.*—The new species is named for F. D. Stone, who, with F. G. Howarth, collected the type specimen.

*Remarks.*—*Tyrannochthonius stonei* is the third representative of the genus to be discovered in the Hawaiian Islands. Previously *T. howarthi* and *T. pupukeanus* have been described from the islands of Hawaii and Oahu (Muchmore, 1979, 1983). All of these species are cavernicolous and more or less modified for subterranean existence. Interestingly, no epigean species of *Tyrannochthonius* has yet been found on the Hawaiian Islands; but it is difficult to believe that none is

present in view of the occurrence of the cave-dwelling forms. In all likelihood, this situation is due to insufficient collecting of litter-dwelling arthropods.

## Acknowledgment

I am indebted to F. G. Howarth of the Bishop Museum for making the specimen available for study.

## Literature Cited

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